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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,665	11/09/2000	Dai Gil Lee	89799.167400	4795

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EXAMINER
PEREZ, GUILLERMO

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/710,665	LEE ET AL.
	Examiner	Art Unit
	Guillermo Perez	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 7-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 7-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-2, 4, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted Prior Art (APA) in view of Ward et al. (U. S. Pat. 5,211,896).

APA discloses (in figure 3a) a composite squirrel cage rotor (20), comprising:

a rotating shaft (21);

a polymer resin body (22) containing powder of high magnetic permeability (according to the background of the invention of the application);

a plurality of squirrel cage conductor bars (23 and 38) positioned around and embedded in the outer part of the polymer resin body (22) and formed of material having high electric conductivity;

a plurality of axial slots (24), wherein the axial slots (24) are formed between the cage squirrel conductor bars (23 and 38); and

cooling bodies (25) inserted into the axial slots (24) for dissipating heat generated in the composite squirrel cage rotor (20). APA discloses that the cooling bodies are heat pipes. APA discloses that chopped fibers are added to the polymer

resin body (22) in order to enhance the mechanical properties such as thermal stability and stiffness of the rotor structures (according to pages 3-4 of the application).

Referring to claim 10, APA discloses a composite squirrel cage rotor, comprising:

a rotating shaft (21);

a polymer resin body (22) disposed upon the shaft (21);

a powder having a high magnetic permeability;

a plurality of squirrel cage conductor bars (38) positioned axially around a periphery of the polymer resin body (22), the conductor bars (38) being partially embedded in the polymer resin body (page 4, lines 6-8), the conductor bars (38) being formed of a material having a high electric conductivity;

a plurality of axial slots (24), the axial slots formed between the conductor bars (38); and

cooling bodies (25) disposed within the axial slots (24), the cooling bodies (25) fixedly retained within the axial slots (24) by the polymer resin body (22 in the circle of figure 4), the cooling bodies (25) dissipating heat generated in the composite squirrel cage rotor.

However, APA does not disclose that the powder is uniformly distributed in the polymer resin body.

Ward et al. disclose that the powder of high magnetic permeability is uniformly distributed in the polymer resin part (column 5, lines 33-37). The invention of Ward et al. has the purpose of improving the consistency of the performance of the core in use.

It would have been obvious at the time the invention was made to modify the squirrel cage rotor of APA and provide it with the particle uniformity disclosed by Ward et al. for the purpose of improving the consistency of the performance of the core in use.

Referring to claims 1, 10, and 11, no patentable weight has been given to the method of manufacturing limitations (i. e. "injection molded", uniformly distributing) since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe,* 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

2. Claims 3-4, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Ward et al. as applied to claims 1 and 2 above, and further in view of Yamada et al. (U. S. Pat. 3,891,879).

APA and Ward et al. disclose a squirrel cage rotor as described on item 1 above. However, neither APA nor Ward et al. disclose an inner core of high magnetic permeability so as to improve the performance of the motor by increasing the magnetic flux density of the rotor.

Yamada et al. disclose an inner core (15 in figure 2) of high magnetic permeability so as to improve the performance of the motor by increasing the magnetic flux density of the rotor (22). The invention of Yamada et al. has the purpose of improving structural rigidity.

It would have been obvious at the time the invention was made to modify the squirrel cage rotor of APA and Ward et al. and provide it with the inner core disclosed by Yamada et al. for the purpose of improving structural rigidity.

Referring to claim 12, no patentable weight has been given to the method of manufacturing limitations (i. e. uniformly distributing) since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe,* 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

3. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Ward et al. as applied to claim 1 above, and further in view of Brinkman (U. S. Pat. 3,715,610).

APA and Ward et al. disclose a squirrel cage rotor as described on item 1 above. However, neither APA nor Ward et al. disclose that the cooling bodies including isothermal cycling material therein. Neither APA nor Ward et al. disclose that the isothermal cycling materials are an ammonia, methanol and Freon. Neither APA nor Ward et al. disclose that the heat pipes are sealed pipes.

Brinkman discloses that the cooling bodies (12) including isothermal cycling material therein (21). Brinkman discloses that the isothermal cycling materials are an ammonia, methanol and Freon (column 4, lines 46-52). Brinkman discloses that the

heat pipes are sealed pipes (figure 3). Brinkman's invention has the purpose of enhancing the cooling capabilities of the rotor without the use of external devices like pumps.

It would have been obvious at the time the invention was made to modify the rotor disclosed by APA and Ward et al. and provide it with the pipes and coolant features disclosed by Brinkman for the purpose of enhancing the cooling capabilities of the rotor without the use of external devices like pumps.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

In response to Applicant's remark that Ward et al. do not disclose "uniform distribution of magnetically permeable powder in a polymer resin body", it must be noted that the end product obtained with the method of manufacturing disclosed in Ward et al. is a uniform distribution of magnetically-permeable powder in a polymer resin body (see column 5, lines 33-37). By compression molding the polymer-coated iron particles, a polymer resin body having a uniform distribution of magnetically permeable powder is obtained, as claimed. The limitations on which the Applicants are relying are method of manufacturing steps.

No patentable weight has been given to the method of manufacturing limitations (i. e. uniformly distributing) since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the

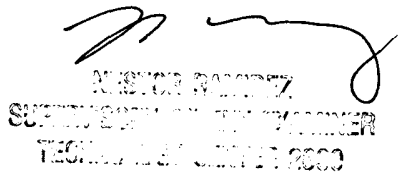
product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe,* 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.



Guillermo Perez
March 6, 2003